TECHNICAL REVIEW DOCUMENT
for
MODIFICATION TO OPERATING PERMIT 96OPMR129

Public Service Co – Pawnee Station
Morgan County
Source ID 0870011

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Revised July 2010

I. Purpose:

This document establishes the decisions made regarding the requested modification to the Operating Permit for Public Service Company's Pawnee Station. This document provides information describing the type of modification and the changes made to the permit as requested by the source and the changes made due to the Division's analysis. This document is designed for reference during review of the proposed permit by EPA and for future reference by the Division to aid in any additional permit modifications at this facility. The conclusions made in this report are based on the information provided in the request for modification submitted to the Division on May 12, 2010, additional information submitted on July 14, 2010, e-mail correspondence and telephone conversations with the source. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Permit Modification Request/Modification Type

The Operating Permit for the Pawnee Station was issued on January 1, 2003 and was renewed on January 1, 2010. Public Service Company (PSCo) submitted a request to modify the permit on May 12, 2010. The source requested that the permit be modified to restore the alternative opacity monitoring requirements for periods when the continuous opacity monitoring system (COMS) is down that had been included in the initial Title V permit. In addition, the source requested that the permit be revised to incorporate the 24-hour opacity indicator range into the compliance assurance monitoring (CAM) plan. The January 1, 2010 renewal permit required the source to set

the 24-hour average opacity based on the results of a performance test.

Colorado Regulation No. 3, Part C, Section X.A identifies those modifications that can be processed under the minor permit modification procedures. Specifically, minor permit modifications "are not otherwise required by the Division to be processed as a significant modification" (Colorado Regulation No. 3, Part C, Section X.A.6). The Division requires that "every significant change in existing monitoring permit terms or conditions" be processed as a significant modification (Colorado Regulation No. 3, Part C, Section I.A.7.f). The source is required to use their COMS to monitor compliance with their opacity limitations. However, there may be times when the COMS is not providing quality assured data. The alternative opacity monitoring requirements that were in the original Title V permit (issued January 1, 2003) was intended to "gap-fill" in those unlikely instances when the COMS was not providing quality-assured data. Therefore, the Division does not consider that the reinstatement of the alternative opacity monitoring requirements is a "significant change in existing monitoring". In addition, the source has requested that the permit be revised to include the specific 24-hour average opacity indicator that was determined by a particulate matter (PM) performance test required by the renewal permit (test to be completed within 180 days of issuance of the renewal permit). The renewal permit already specified that the source would monitor a 24-hour average opacity as part of their CAM plan, however, since the specific indicator range was to be based on the results of a future performance test, the actual value of the 24-hour average opacity was not included in the permit. Since the permit already requires that the 24-hour average opacity be monitored, the Division does not consider inclusion of the specific indicator value to be a "significant change in existing monitoring". Since the requested modifications are not a "significant change in monitoring" the Division agrees that these modifications qualify as minor modifications.

III. Modeling

The requested modification does not affect emissions from the facility (i.e. no increase in emissions as a result of this modification); therefore, modeling is not required.

IV. Discussion of Modifications Made

Source Requested Modifications

The Division addressed the source's requested modifications as follows:

Section II, Condition 9 – Continuous Emissions Monitoring and Continuous Opacity Monitoring Systems

The source requested that the alternative opacity monitoring requirements that were included in the original Title V permit (issued January 1, 2003) but were subsequently removed during processing of the Title V renewal permit be reinstated. The alternative opacity requirements were included in Section II, Condition 9.4.3 of the original Title V

permit. The Division has reinstated Section II, Condition 9.4.3 for the reasons discussed below.

During the processing of the Title V renewal permit for this facility, the Division removed requirements for monitoring opacity from the coal-fired boilers when the continuous opacity monitors were down based on comments that were received during the public comment period on the Title V permit for another coal-fired power plant. However, based on comments received during the public comment period on other Title V permits for coal-fired power plants, the Division has determined that the alternate opacity monitoring requirements should be reinstated.

Although the coal-fired boiler is subject to continuous opacity monitoring requirements under 40 CFR Part 75, there are periods under Part 75 where monitor downtime is approved, such as periods of calibration, quality assurance and monitor repairs, and the Division recognizes that even equipment that is well operated and maintained can experience periods of down time. The alternate opacity language is in addition to the Part 75 monitoring requirements and is intended to provide credible evidence of compliance with the opacity emissions limitations in the permit when the opacity monitor is down.

The alternate opacity monitoring requirements specify three methods that the source may use to assess compliance with the opacity limits when the COMS is down for more than eight consecutive hours. These methods are back-up COMS, EPA Method 9 observations and an "opacity report during monitor unavailability". The back-up COMS and Method 9 observations are straight-forward and are based on the reference method testing. The "opacity report during monitor unavailability" is based on parametric monitoring. The language included in the permit requires that for the "opacity report during monitor unavailability" the permittee record the opacity monitoring reading before and after those periods that the COMS is unavailable. They must also record and maintain a description of operating characteristics that demonstrate the likelihood of compliance including, but not limited to, information related to the operation of the control equipment and any other operating parameters that may affect opacity. Past reports of this nature submitted for other PSCo facilities have noted such items as whether there were operational problems with or corrective maintenance conducted on the baghouse, whether the pressure differential was in the normal range, the unit operating load, and whether there were unit upsets. As previously stated, the "opacity report during monitor unavailability" is intended to provide credible evidence, regarding compliance with the opacity emissions limitations.

In the February 24, 1997 Federal Register, EPA promulgated credible evidence revisions to 40 CFR Parts 51, 52, 60 and 61. EPA states the following in the preamble to this final rule (page 8314, 3rd column):

> The credible evidence revisions are based on EPA's long-standing authority under the Act, and on amplified authority provided by the 1990 CAA Amendments. Section 113(a) of the Act authorizes EPA to

> bring an administrative, civil or criminal enforcement action "on the basis of any information available to the Administrator." In this provision, which predates the 1990 CAA Amendments, Congress gave EPA clear statutory authority to use any available information--not just data from reference tests or other federally promulgated or approved compliance methods--to prove CAA violations.

In addition, EPA stated that (page 8318, 1st column):

> To the contrary, with regard to sources subject to Title V permits, EPA generally expects that most if not all of the data that EPA would consider as potentially credible evidence of an emission violation at a unit subject to monitoring under the agency's proposed CAM rule would be generated through means of appropriate, well-designed parametric or emission monitoring submitted by the source itself and approved by the permitting authority, or through other requirements in the source's permit. Sources not subject to CAM should still be readily able to discern the information, for example information about the operation of pollution control devices, that is relevant to their compliance with applicable regulation.

Finally it should be noted that the alternative opacity monitoring language that is being put back into the revised Title V permit was in the original Title V permit issued for this facility (initial issuance January 1, 2003) and was in effect until issuance of the Title V renewal permit on January 1, 2010. The initial Title V permit went through a 30-day public comment period and a 45-day EPA review period prior to issuance.

24-Hour Average Opacity Indicator

The source has conducted the particulate matter performance test and determined the 24-hour average baseline opacity and has requested that it be included in their permit. The Division included the 24-hour average opacity in the permit as follows:

- The baseline opacity level was included in Condition 1.15.1.2 (CAM requirements).

- The baseline opacity level was included in the CAM plan table (Appendix H)

CAM Plan – Appendix H

In addition, the source requested that the CAM plan be revised to correct some errors. The CAM plan specifies annual internal inspections of the baghouse. However, in two locations in the table, a frequency of semi-annual is specified. The errors have been corrected as requested.

Other Modifications

In addition to the requested modifications made by the source, the Division used this opportunity to include changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this modification.

The Division has made the following revisions, based on recent internal permit processing decisions and EPA comments on other permits, to the Pawnee Station Operating Permit with the source's requested modifications. These changes are as follows:

Section I - General Activities and Summary

- Removed Section II, Condition 1.10 from the list of state-only requirements in Section 1.4.

- Removed the third column labeled "Facility ID" in the table in Condition 6.1, as the ID number is the same as that in the first column. The first column was relabeled "Emission Unit No./Facility ID".

Section II.1 – Coal-Fired Boiler

- Included the PM emission factor from the latest performance test (conducted in April 2010) in the summary table (Condition 1.2.). In addition, the text portion of Condition 1.2 was revised to indicate that the emission factor from the "most recent" performance test was to be used to calculate PM emissions.

- Condition 1.10 was revised to remove the state-only lead standard of 1.5 $\mu g/m^3$. Since EPA promulgated a more stringent national ambient air quality standard for lead in 2008, the Division removed the state-only lead requirement from Colorado Regulation No. 8, Part C. Therefore, the requirement is being removed from the permit. Note that the lead NAAQS will not be included in the permit as NAAQS are not considered applicable requirements and as such are not included in Title V permits.

Section II.11 – Lead Periodic Monitoring Requirements

- Removed Condition 11.1 (Reg 8 lead standard).

CAM Requirements (Section II, Condition 1.1.2 and Appendix H)

EPA did not comment on the CAM plan included in the Title V renewal permit for Pawnee Station at the time the renewal permit was processed (the renewal was issued on January 1, 2010). However, EPA did comment on the CAM plan in the Title V permit for another coal-fired utility boiler that has a CAM plan that is virtually the same as the CAM plan for Pawnee. Therefore, the Division is making the appropriate revisions to the CAM plan for Pawnee in this modification to address EPA's concerns. EPA's

concerns with the other Title V permit and the changes made to the Pawnee permit are as follows:

As previously stated, the Division has included the baseline opacity value set by the performance test in this modified permit. EPA had concerns with the other Title V permit because that permit did not specify that the baseline opacity was to be set within 180 days or require that the source submit the proposed baseline opacity and neither the permit nor the technical review document for the permit specified that the permit would be revised at a later date to include the actual value of the baseline opacity. The source conducted the performance tests on April 27, 2010 and began monitoring the 24-hour baseline opacities shortly afterwards. The renewal permit was issued on January 1, 2010; therefore, the CAM indicator ranges for the 24-hour opacity were set within 180 days. Since the 24-hour baseline opacity was set within 180 days, there is no reason to add language to the permit to specify that the initial baseline be determined within 180 days. The Division will however note in Section II, Condition 1.1.2 that the initial baseline opacity was set and also include a requirement that the source submit any proposed baseline opacity determined from any subsequent performance tests and an application to modify the permit to reflect the new baseline opacity.

In addition, the Division has revised some language in the justification of the 24-hour opacity indicator to clarify that the 24-hour opacity indicator is not presumptively acceptable monitoring. An initial draft of the renewal permit relied on the compliance provisions (i.e., using a 24-hour average baseline opacity) required for new (constructed after February 28, 2005) electric utility steam generating units subject to particulate matter fuel based emission limitations (i.e. units of lb/mmBtu) in 40 CFR Part 60 Subpart Da as a CAM indicator. However, based on comments submitted by PSCo during the pre-public comment review period, the method to determine the 24-hr baseline opacity was revised but the CAM plan justification was not.

In their comments on the other Title V permit, EPA indicated that it was not appropriate to exclude startup, shutdown and malfunction data when determining the 24-hour average opacity values. Therefore, the Division has removed this from the CAM Plan (Appendix H – under Section III.c – Justification, Rational for Selection of Indicator Ranges).

In addition, EPA noted in their comments on the other Title V permit that neither the technical review document or the permit indicated whether the source submitted performance test data with their CAM plan and whether the Division accepted that performance test data. The Division has added language to the CAM Plan (Appendix H) in Section III.c - Justification, Rational for Selection of Indicator Ranges to address EPA's concern.

Finally, in their comments on the other Title V permit, EPA indicated that further justification of the 15% opacity indicator was necessary. The Division requested that the source provide additional information to justify the 15% opacity indicator and in

response to that request, PSCo submitted information on July 14, 2010 indicating that the 15% opacity indicator was based on operating experience. PSCo's submittal indicated that sudden spikes in opacity conditions is a good indicator that something has occurred within the baghouse controls system that could potentially be affecting baghouse performance. PSCo indicated that based on their years of operating experience an opacity spike of 15% opacity for 60 seconds or more is generally an indicator that there is a problem with the baghouse and that an opacity spike below that set point would pick up spikes in opacity that are seen with normal operation. The Division agrees that the 15% indicator is appropriate, as it is above the expected normal opacity levels seen in coal-fired units with well operated baghouses but is below the allowable opacity limit and as such is expected to be a good indicator of problems with the baghouse. Therefore, the Division has added language to the CAM Plan (Appendix H) in Section III.c - Justification, Rational for Selection of Indicator Ranges to further justify the 15% opacity indicator.

Section V – General Conditions

- Labeled the 3rd paragraph of General Condition 29.a as 29.b and added the provisions in Reg 7, Section III.C as paragraph e.

- Revised the version date.

Addendum to the Technical Review Document prepared for the January 1, 2010 Renewal permit

Recently the Division has been reviewing Title V Petitions and Orders related to coal-fired power plants in an effort to be proactive on some of the issues. As part of that effort, the Division considers that although the particulate matter monitoring specified in the permit is part of a three-prong approach (CAM, performance testing and baghouse maintenance), this approach was not specifically addressed in the technical review document for the Title V renewal permit (note that prior to issuance of the renewal permit, particulate matter monitoring was based on performance tests and baghouse maintenance). Therefore, this language is intended to describe the three prong approach used to monitor compliance with the particulate matter standards.

The first prong of the particulate matter monitoring approach is performance tests, which are a direct indicator of compliance with the particulate matter standard and as such is a readily apparent monitoring tool. As indicated in the table below, past performance tests have indicated that the particulate matter standards have been met.

	Particulate Matter Emissions (lbs/MMBtu)	
	Performance Test Result	Emission Limitation
2003 Performance Test	6.73×10^{-3}	0.1
2010 Performance Test	1.26×10^{-4}	0.1

A baghouse is a relatively passive control device, in that it acts as a filter, as long as

exhaust gas passes through the baghouse particulate matter entrained in the exhaust is captured. Unlike other control devices, such as a scrubber, the effectiveness of a baghouse cannot be increased by simply providing more reagent. However, the effectiveness of the baghouse can be decreased if bags are torn or plugged, hence proper baghouse operation and maintenance is essential to ensuring the baghouse operates properly and effectively removes particulate matter.

As indicated in the preamble to the CAM rule (62 FR 54918):

> The general purpose of the monitoring required by part 64 is to assure compliance with emission standards through requiring monitoring of the operation and maintenance of the control equipment and, if applicable, operating conditions of the pollutant-specific emissions unit…..Logically, therefore, once an owner of operator has shown that the installed control equipment can comply with an emission limit, there will be a reasonable assurance of ongoing compliance with the emission limit as long as the emissions unit is operated under the conditions anticipated and the control equipment is operated and maintained properly.

The CAM monitoring sets specific indicators that are used to monitor the operation of the control device. Under the CAM requirements, ranges are specified for the indicators and operation of the unit outside of the indicator range is subject to investigation, and if applicable, corrective action, in addition to reporting requirements.

The performance tests provide direct evidence of compliance and provided the baghouse is properly operated and maintained, continued compliance with the standard is expected. The CAM requirements serve as specific indicators that the baghouse is operated properly. As a result all three prongs together are appropriate measures to assure compliance with the particulate matter emission limitations.